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AUGUST 1991

PROGRESS

Streamside Tailings Superfund Report

By the Montana Department of Health and Environmental Sciences and the U.S. Environmental Protection Agency

What's happening at the site

The Streamside Tailings operable unit is part of the Silver Bow Creek/Butte Area Superfund site. Streamside Tailings includes Silver Bow Creek and its adjacent floodplain and tailings deposits from Butte to the Warm Springs Ponds (please refer to map on page 4). This summer, the Montana Department of Health and Environmental Sciences (MDHES) and Atlantic Richfield Company (ARCO), in consultation with the U.S. Environmental Protection Agency (EPA), will resume active investigation of the Streamside Tailings, working toward the selection and implementation of a remedy for that area.

In mid-March, MDHES began negotiating with ARCO for development of a work plan to direct ARCO in conducting the remedial investigation/feasibility study for the Streamside Tailings Operable Unit. MDHES now has an administrative consent order and a draft work plan available for public review. The administrative consent order is the MDHES legal document guiding ARCO's work and the work plan is the document outlining what activities will be conducted.

This progress report briefly describes some of the major components of the remedial investigation/feasibility study proposed in the draft work plan. Copies of the complete draft work plan can be reviewed or checked out from the information repositories listed on page 3 in the "Get Involved" section. MDHES encourages everyone to review the work plan and provide comments and recommendations to MDHES. The

Cont. on page 2

Don't miss out!

Streamside Tailings public workshops and meeting

MDHES will hold Streamside Tailings

Workshops for the public:

August 6, 7 p.m., Anaconda, Copper Village Museum at 401 East Commercial
August 7, 7 p.m., Missoula, St. Patrick Hospital at 500 West Broadway
August 8, 7 p.m., Butte Business Incubator at 305 West Mercury Street

These workshops will be held in an informal setting in which MDHES and the public can discuss upcoming activities and the work plan for the Streamside Tailings portion of the Silver Bow Creek Superfund site.

Public meeting:

August 13, 7 p.m., Ramsay School in Ramsay

This public meeting will be a more formal setting in which MDHES will summarize the work plan and order and take formal oral and written public comments.

For more information, call Site Project Manager Neil Marsh or Superfund Public Information Officer Jane Stiles at MDHES in Helena 1-800-648-8465.

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What's happening (from page 1)

review and comment period extends from July 24 to August 23, 1991. Comments should be sent to Neil Marsh, Montana Department of Health and Environmental Sciences, Cogswell Building, Helena, MT 59620.

On August 6-8, MDHES will hold informational workshops in Anaconda, Missoula and Butte to discuss with the public the plans for investigating the Streamside Tailings. These workshops will give everyone an opportunity to ask questions, voice concerns, and generally discuss upcoming activities with MDHES. Residents are encouraged to attend. In addition, MDHES will hold a public meeting at the Ramsay School in Ramsay where the public can present oral and written comments on the work plan. Formal written comments can also be submitted at any time prior to the close of the public comment period. Please refer to page I for times and locations of meetings.

For more information about the Streamside Tailings portion of the site or any other Superfund activities in Montana, the public is encouraged to call the MDHES Superfund hotline in Helena, 1-800-648-8465, weekdays from 8 a.m. to 5 p.m. or to write MDHES, Cogswell Building, Helena, MT 59620.

Understanding the Streamside Tailings portion of the site

Background

The Streamside Tailings operable unit of the Silver Bow Creek/Butte Area Superfund site follows the Silver Bow Creek channel beginning just below the Colorado Tailings in Butte and extends 25 miles downstream to the inlet of the southernmost of the three Warm Springs Ponds (see map). The Streamside Tailings area includes not only Silver Bow Creek itself, but also the adjacent mining wastes deposited along the creek banks and nearby flood plains. Mine wastes, from milling and smelting facilities once located next to Silver Bow Creek in Butte, have been washed down the creek for more than 100 years. These wastes, known as tailings, are contaminated with arsenic and heavy metals such as lead, copper, zinc and cadmium.

In addition, railroad bed ballast in the Silver Bow Creek area was often made up of mine waste rock or slag, and may be contaminated by heavy metals. Ore hauled between Butte and Anaconda may also have spilled from trains. Because the railroad beds lie close to Silver Bow Creek, and can affect the creek and floodplain, MDHES will also include them in the Streamside Tailings investigation.

Wastes from wood treating facilities, including arsenic, creosote, and pentachlorophenol (PCP) also contaminate the water and sediments of Silver Bow Creek. These wastes most likely originated at the Montana Pole and Treating Plant in Butte and the Rocker Timber Framing Plant in Rocker.

Where are the tailings now?

An estimated three million cubic yards of tailings and contaminated soils are widely scattered along Silver Bow Creek and its floodplain, in many places killing all vegetation. The largest tailings area, 160 acres, lies near the town of Ramsay and is known as the Ramsay Flats. In some areas, the tailings are estimated to be several feet thick.

Tailings have also been carried onto agricultural areas by Silver Bow Creek irrigation water. Affected agricultural areas, however, will be investigated under a separate study.

Why should we be concerned about the tailings?

Many of the metals in the tailings are at concentrations high enough to be toxic or harmful to plants, animals, and humans. The tailings are typically acidic, which causes the metals to dissolve readily, making them easily transported in water. Groundwater and surface water can be contaminated by metals picked up as water moves through the tailings.

In addition, during dry periods highly soluble metals salts form on the surface of bare tailings as soil moisture evaporates. These metals salts are quickly dissolved and washed into the creek during summer thunderstorms. Bare, unvegetated tailings can also be readily washed into the stream by storm or snowmelt run-off. Loadings of metals into Silver Bow Creek have degraded the stream quality to such an extent that no fish are present and other aquatic species are limited.

Bare, unvegetated tailings can also be blown by winds to residential or recreational areas where they may be inhaled or ingested by humans, and have the potential to cause increased cancer or other health risks because of their metals content.

What is being done about the tailings problem?

As mentioned previously MDHES and ARCO are beginning the remedial investigation/feasibility study for the Streamside Tailings operable unit. This process involves the following major steps during the investigation:

- collect information about the quantity, concentrations, and location of contamination at the site,
- assess the risk that contamination presents to public health and the environment,
- develop and evaluate alternatives for remedying the contamination,
- select the remedy, and
- prepare the final design and implement the remedy.

More detail about the Superfund process and the way in which this investigation will be coordinated with other Superfund studies in the Clark Fork Basin can be found in the Clark Fork Superfund Sites Master Plan (November 1990). If you don't have a copy, call the MDHES Superfund hotline to request one.

Why is ARCO involved in the process?

ARCO is the successor-in-interest to the Anaconda Minerals Company, which owned a large portion of the mining, milling, and smelting operations in the upper Clark Fork basin. ARCO has been named as one of the primary potentially responsible parties for the contamination of Silver Bow Creek. As such, ARCO is potentially responsible for any costs spent in cleaning up the contamination. Superfund law provides that potentially responsible parties be allowed to conduct the investigations, using their money and contractors, if they desire to do so and provide assurances that they are financially and technically capable of doing so. Superfund investigations are performed by potentially responsible parties only after an approved work plan is developed. The investigation is conducted only under the explicit supervision of the lead Superfund agency. In addition, the agency, in this case MDHES, is entirely responsible for conducting the public health and environmental risk assessment, conducting public involvement activities and selecting the remedy.

What is the schedule for the investigation?

MDHES anticipates the following schedule based on information available now: Field investigations will begin this summer and continue through 1992. Two treatability studies will be conducted during 1992 and 1993. The risk assessment will be conducted in 1993 after all the baseline data is collected. Remedy alternatives will be evaluated and the necessary reports drafted in 1994. The record of decision specifying the final selected remedy will be published in 1995.

Get involved

Public involvement is vital to the success of the Superfund process. The public is encouraged to learn more about site issues and to voice questions, concerns, and suggestions. MDHES is currently preparing for the remedial investigation, or information-gathering, portion of the Superfund process. It is important that the public become involved early in these investigations so all perspectives about the site can be considered. In addition, throughout the process, MDHES will ask for more public input regarding the scope of the study, the development and evaluation of alternatives, and the selection of the remedy. There are a number of ways the public can be involved in the site:

1. Form a citizens group:

At several Superfund sites, residents have formed citizens groups that meet regularly and work closely with MDHES. Currently, no citizens group exists for the Streamside Tailings area, but MDHES encourages the public to form a group. Citizen groups are organized and run by the citizens. MDHES staff is available to help make presentations and discuss site issues with these groups.

2. Attend public meetings:

MDHES will hold a number of public meetings throughout the process. Unless otherwise requested, these meetings will be held in the evening at convenient locations such as schools, community halls and local government buildings.

3. Obtain progress reports:

MDHES will publish periodic progress reports such as this one about the Streamside Tailings investigations. These progress reports are sent to interested parties who have requested they be placed on the MDHES mailing list. If you want to be on the mailing list or are not sure if you are on it, please fill out and send in the mailing list form.

4. Contact site project officer and public information officer:

MDHES Streamside Tailings Project Officer Neil Marsh, and Superfund Public Information Officer Jane Stiles are available to discuss the project with the public, either individually or at group meetings. You can reach Neil or Jane by calling the MDHES Superfund toll-free number in Helena: 1-800-648-8465, from 8 a.m. to 5 p.m., weekdays, except holidays. The MDHES Superfund address is Cogswell Building, Helena, MT 59620.

5. Review Superfund documents at information repositories:

Documents from this and other Clark Fork Basin Superfund sites can be found at the following locations:

- Butte Public Library
- Montana Tech Library in Butte
- Anaconda Public Library
- U.S. Park Service Office, Deer Lodge
- Missoula Public Library
- University of Montana Library
- Montana State University Library
- State Library in Helena

Focusing the remedial investigation

The purpose of conducting a Superfund remedial investigation is to determine what kinds of contaminants are present, how much contamination exists and where it exists. MDHES will use this information to assess the risk associated with the contaminants and to design and evaluate alternatives for remedying the contamination.

The draft work plan for the Streamside Tailings remedial investigation/feasibility study provides a basic description of the investigation that will be undertaken to obtain remaining data so that MDHES can adequately assess risk and evaluate potential site remedies. Sampling and analysis plans will be developed this summer that will specify all details of the investigations to be undertaken this year. Following is a list of the investigations to be conducted:

Surface water:

Needed information includes details about surface water during high flows and runoff. Samplers will collect water quality and stream sediment samples at various locations along Silver Bow Creek and at major tributaries. Automatic sampling devices will be installed at three locations to obtain samples to help describe daily and storm variations in Silver Bow Creek water quality. Streambed sediment transported during flood conditions will also be investigated. The stream near Rocker and the Montana Pole and Treating Superfund sites will be sampled for possible organic wastes from wood treating operations.

Vegetation:

MDHES will oversee collection of information identifying major plant species in the Streamside Tailings area. This investigation will include sampling for metals uptake in those plants. Researchers will create detailed maps of the area which will include agricultural areas, home gardens, noxious weeds and wetlands.

Tailings and contaminated sediment:

Researchers will use aerial photography, detailed field mapping and tailings sampling to summarize information about tailings and contaminated sediment volumes, locations and concentrations. MDHES is seeking information about how contamination has migrated from obvious tailings areas to underlying and adjacent soils. Railroad beds will be considered in this portion of the investigation to determine how contaminated they are.

Groundwater:

Information is needed about groundwater quality, flow, levels and other characteristics. A number of new monitoring wells will be installed along the creek. Scientists will also collect information about the interrelationship of groundwater and surface water and the interrelationship of groundwater and tailings deposits within and above the water table.

Air:

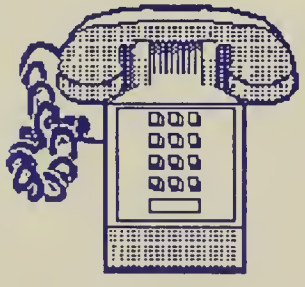
The purpose of this part of the remedial investigation is to determine if winds are picking up contaminated tailings particles and transporting them to areas of potential human contact, to determine metals concentrations in those particles, and to assess the risk of any potential exposures. Historic wind information will be used to help determine where to place stations for sampling airborne dust.

Land ownership and use:

Information about residential, agricultural and recreational uses of the Streamside Tailings area will be used in the selection of remedy alternatives and in the risk assessment.

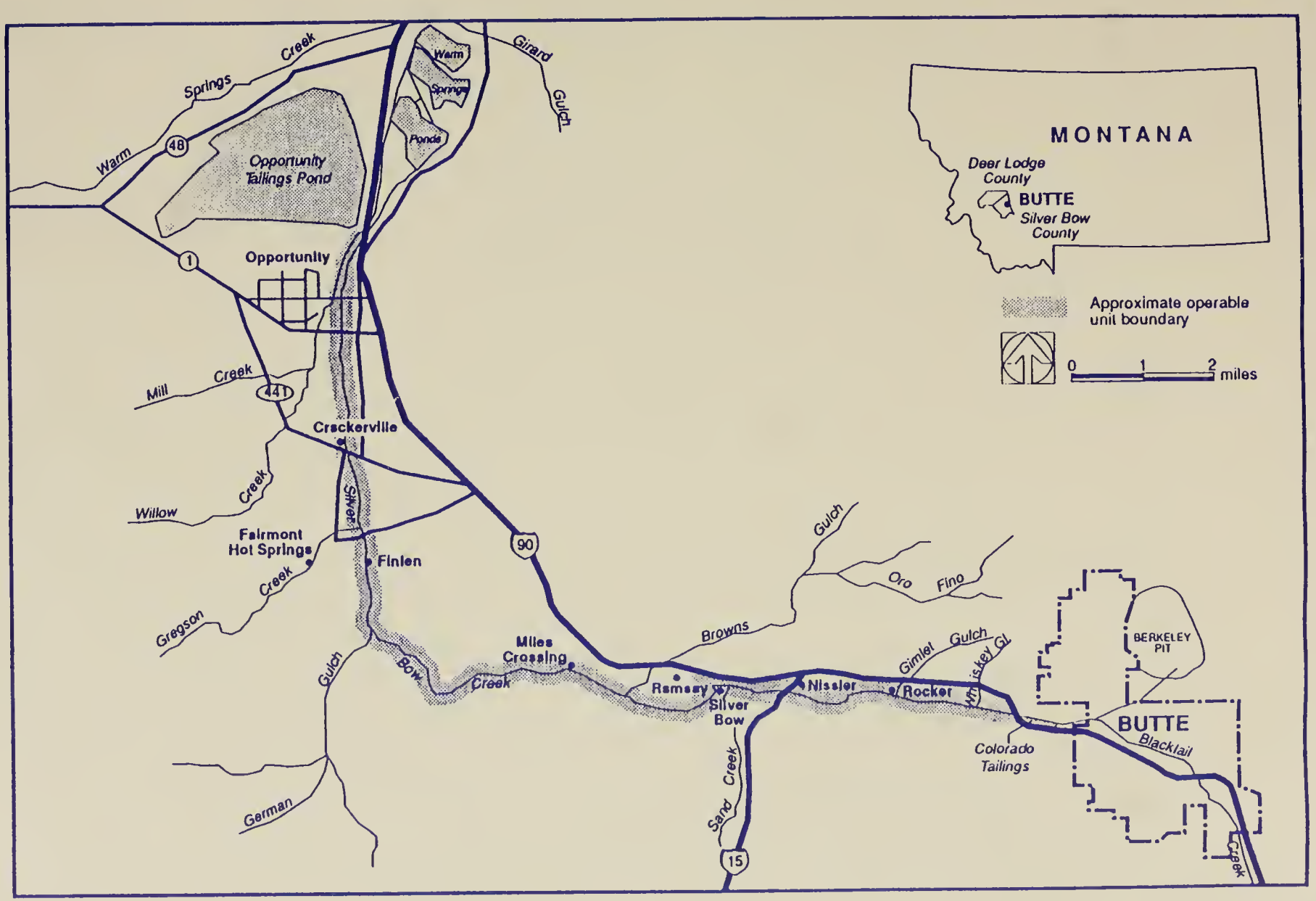
Historical and archaeological information:

Historic preservation laws require that any historically significant resources of an area be researched before site remedy activity takes place. ARCO will be required to mitigate any potential adverse impacts that the project might cause to historical and archaeological resources.



If you have comments, concerns or questions about the Streamside Tailings, call the toll-free Superfund hotline in Helena. In service 8 a.m. to 5 p.m. weekdays except holidays

1-800-648-8465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BUTTE
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Warm Springs Ponds
Opportunity Tailings Pond
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Silver Bow Creek
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Gregson Creek
Gulch
German
Miles Crossing
Browns Gulch
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Considering potential remedies

During the remedial investigation of a Superfund site, involved agencies may conduct or oversee the operation of "treatability studies." These treatability studies are experiments to test methods that may be considered for a site remedy. At the Streamside Tailings portion of the Silver Bow Creek/Butte Area site, one treatability study is on-going and another is proposed.

STARS

MDHES and EPA, through an agreement with the Montana State University Reclamation Research Unit and Schafer and Associates, started the Streambank Tailings and Revegetation Studies (STARS) in 1987. Under this study, MSU and Schafer researchers have added lime to a variety of tailings types to lower their acidity. These amended tailings were then planted with plants specifically chosen for use in arid, metals-enriched soils. The purpose of the study is to determine if metals in amended tailings on the streambank can be immobilized by lime neutralization and the tailings surface stabilized by healthy plant growth. Currently, STARS test plots are located near Silver Bow Creek in four locations. Results are expected in time for consideration as a site remedy.

ARCO demonstration project

ARCO has proposed to conduct a large-scale test along Silver Bow Creek from the town of Rocker to approximately one mile downstream. Similar to the STARS project, the ARCO project seeks to hold tailings in place and establish healthy vegetation along the creek and in the floodplain. Unlike the STARS project, the ARCO demonstration project includes removal of tailings from areas especially susceptible to flooding and stream channel improvements to reduce the potential for streambank erosion and channel meander into amended tailings.

Are you on our mailing list?

If you wish your name to be added to or deleted from the mailing list for the Streamside Tailings Portion of the Silver Bow Creek/Butte Area Superfund site, or if you wish to update your address, please fill out, detach, and mail the following form to Janie Stiles, Montana Department of Health and Environmental Sciences, Cogswell Bldg., Helena, MT 59620.

Name _____

Affiliation (optional) _____

Address _____

City, State _____

Zip _____

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